Model Aquatic Health Code
Project Outline

❖ Background

In the United States, all pool codes are reviewed and approved by state and/or local public health officials. There are no uniform national standards governing design, construction, operation, and maintenance of swimming pools and other recreational water venues. Thus, the code requirements for preventing and responding to recreational water illnesses can vary significantly among local and state agencies. A model national code would ensure that the best available standards and practices for protecting public health are available for adoption by state and local agencies. The model code should recognize, incorporate and address the following priority issues:

Surveillance, outbreaks, maintenance, disparate nature of pool codes and enforcement, lack of national funding, CSTE position papers, workshop outcomes, number of state codes and local codes, age of codes, regional or industry standards that compete with each other, international standards and their applicability, uniform standard of design which will benefit designers and manufactures, need for early adoption of new technology or processes once proven effective, data-based standards so that the code is more defensible at the state level and easier to get through legislature, etc.

❖ Vision/Mission Statement

Our goal is to develop a Model Aquatic Health Code that is user-friendly, knowledge-based, and scientifically supported in an effort to reduce risk and promote healthy recreational water experiences. Our objective is to transform varied swimming pool regulations used by health departments into a uniform national code to ensure the health and safety of the swimming public.

❖ Path

Develop a comprehensive national consensus risk reduction plan for the design, construction, alteration, replacement, operation, management, and regulatory oversight of aquatic facilities in the United States. This would be accomplished through development of a model aquatic health code and risk reduction plan that is data and best practices based, national in scope, can be implemented across the U.S., is updated on a continuous basis, and includes input from all sectors and levels of public health, all segments of the aquatics industry, and the general public.

❖ Goals/Objectives

The Plan Process will be:
- transparent
- inclusive
- communicative
- timely
- modular

The Plan will be:
- data or best practices driven
- modular
- current and updated
- free and accessible for all

The Plan will drive:
- reduction in recreational water illnesses
- adoption of a universally recognized minimum standard throughout the U.S.
- a need for training and education
- the need for epidemiological/environmental health surveillance systems
- data collection and analysis to support recommendations
- data-based decision making
- a systems-based and/or performance based approach to aquatic facility design and operation
- a research agenda

❖ **What is the thinking behind the goals and objectives?**
The Plan Process will be:
- Transparent
    - Web site, constant updates, rules of engagement, organization with names.
- Inclusive
    - Steering Committee and technical committees will include a broad geographic representation and involve a variety of professionals (epidemiologists, environmental health professionals, operators, suppliers, designers, engineers) that will provide expertise.
- Communicative
    - Web, regular reports, news/status from Director, presentations at national meetings, semi-annual internet conference, use of NSPF media outlets, EHSB column in NEHA journal, other trade journals, CDC MMWR/Notice to Readers, opportunity for public comment.
- Timely
    - Release modules, set deadlines, prioritize products, keep a sense of movement and urgency, time product release for key times to get media interest (e.g. start of swim season).
    - Need low hanging fruit for early release (updated fecal accident guidelines, MMWR R&R, items to reduce incidence of outbreaks from chlorine sensitive pathogens).
- Modular
    - Able to complete sections faster than an entire document. Allows priorities to be addressed first, keeps a sense of progress in the process, multiple modules can be worked on simultaneously by different technical committees, Steering Committee can keep global direction in mind, modules will be stand alone units that can be individually used when finalized.

The Plan will be:
- Data or best practices driven
  - Use data where needed or plan to collect over time, need repository of best practices for operation that all operators can access (need to define what is a best practice versus common practice) – set up criteria for decision making (goal, factors being considered, does it achieve the desired outcome, is it reproducible).
- Modular
  - See above.
- Current and updated
  - Model an update process on the Conference for Food Protection; they have a board meeting in April that could teach us a great deal. Allow all players to put in position papers to adjust plan and have a vote on modification.
- Free and accessible for all
  - Plan will be on the web for all to view and comment. Process is posted, representation clear.

The Plan will drive:
- Uniformity of codes across the U.S.
  - The disparate nature of codes leads to inconsistent operation and enforcement.
- A need for training and education of public health professionals, operators, and the general public
  - Preliminary data suggest that education across the board improves understanding on each sector's role in public health role; however, more data is needed. The plan should give some idea on key elements that are needed by staff or inspectors to perform their job functions. Job functions should drive training development.
- The need for epidemiological/environmental health surveillance systems
  - Continue to build database for outbreaks/disease/injury that supports the need for plan and recommendations being made, gives insight into what causes outbreaks, and drives changes in surveillance data being requested. Plan is likely to drive implementation of new systems; ask sentinel states to give data to make case that it is useful.
- Data collection, analysis, and data-based decision making
  - Routine, standardized pool inspection data that is electronic and analyzable would help collect data on efficacy of plan changes, expand the national database, yield baseline data for the monitoring plan effort through future years, and improve communication between groups.
  - Analyzable data means that one can monitor trends and changes in codes to help identify where resources should be invested.
  - Decision making will also be informed by data collected as part of the research agenda and will reinforce, redefine, or reevaluate plan recommendations.

- A systems-based and/or a performance based approach to aquatic facility design and operation
  - Hypothesis is that systems-based and performance based approaches yield superior results to prescriptive standards by allowing for more flexibility to meet intended outcomes; this can be tested.
- A research agenda
  - Plan needs will drive funding and scope of key research projects. Need to clearly outline data that are needed and how they will be used in order to ensure that the research yields data that are needed. These data will strengthen or underwrite plan recommendations. Quality data will drive better decisions on engineering, hydraulics, disinfection, etc.

❖ **Organization, Process, and Plan Development**
- Director
  - Orchestrates process.

- Steering Committee
  - Membership by nomination.
  - Small, representative, code of ethics (see below).
  - Work on editorial control at top so overall product fits mission and objectives.
  - Need basic pool knowledge to be able to evaluate plan progress.
  - Determine how often to meet and where, consider conference calls versus meeting at major meetings, set up permanent call numbers, annual meeting at World Aquatic Health Conference.
  - No surrogates – if member cannot attend a meeting/conference call, he/she will not be able to send a representative in his/her place.

- Technical Committees
  - Code of ethics: represent the country not themselves, communicate with colleagues inside and outside company or department, sign something to give them permission to not just represent their company, individual opinions not quoted, need to move past what they may perceive as competitive advantage.
  - Will require specific skill level which is committee dependent.
  - Long and short term seats plus chairperson, unknowns come in on short but only move to long through another process.
  - Time commitment: rotation of members on regular basis, regular conference calls to make quick progress, support from Directorate/ Steering Committee.

- Plan Process
  - Develop individual components and release rather than a complete document – completed items may be up for review and updating while other modules will just be under development.
  - Need list of modules and prioritize development of each.

- Prepare outline of "full plan" with rough components so group sees final vision, then prioritize each section for creation. All readers will know what is being worked on with rough timeline and see sequence in which projects will come on line.
- Modules allow release of information before the entire plan is completed, maximize input from technical committees by involving representatives from across the U.S.

❖ **Process Components and Group Roles**
- Plan Document layout and philosophy
  - Code portions
  - Appendices with explanations and data, operation recommendations
  - Preventive maintenance guide
  - Avoid being too prescriptive

- Library
  - Find what has been created out in world
  - Create repository for use by workers in virtual workspace
  - Collect codes, standards
  - Collect science articles needed

- Steering Committee role
  - Initialize plan outline
  - Set plan process
    - Technical committees work by consensus using available science, engineering, best practices, defensibility
    - Excellence versus perfection is the goal
    - Mechanism for change is built in for updates
  - Keeps records of issue discussions
  - Assign priorities
  - Set up technical committees (chairperson)
  - Edit plan for uniformity and one "voice" and send back to technical committee

- Technical committee role
  - Draft members from across country
  - Determine expertise needed
  - Develop timeline
  - Regular report/briefing back to Director/Steering Committee
  - Draft work plan
  - Draft language
  - Determine research needs

❖ **Plan Outline and Potential Sections**

1) Scope of Plan: Man-made water venues with bather/water exposure (contact, immersion, inhalation) – include healthcare-based pools, therapy, water recreation attractions (slides, leisure rivers, etc.).

2) Definition of terms
   a) Aquatic venue: pull definitions from codes
   b) Performance measures and performance based design, need to determine and establish appropriate criteria
   c) Best practice
   d) Systems-based approach

3) Design and Construction
   a) Materials
   b) Structural stability
   c) Safety requirements
   d) Lighting
   e) Electrical
   f) Ventilation
   g) Water supply
   h) Wastewater disposal
   i) Circulation systems
   j) Filtration
   k) Disinfection/pH
   l) Hygiene facilities
   m) Water temperature adjustment/control
   n) Construction (new, alterations, replacements)

4) Operation and Maintenance
   a) Water quality parameters (e.g. disinfectant, pH, TDS, alkalinity, stabilizers, filter enhancers/flocculants, etc.)
   b) Safety parameters
   c) Recirculation parameters
   d) Peripheral items (e.g. slides, starting blocks)
   e) Hygiene facilities
   f) Monitoring and testing
   g) Facility maintenance (e.g. hardscape, equipment, safety devices, etc.)
   h) Cleaning (including biofilms)
   i) Potable water and sewage systems, cross connections
   j) Re-opening procedures after closure (both long and short term)
   k) Preventive maintenance plan

5) Policies and Management
   a) Lifeguarding training
   b) Operator training
   c) Staffing plan (trained personnel/operator availability)

d) Fecal accident/body fluid policies
e) Swimmer empowerment methods: posting inspection score, training certificates
f) Bather load policies
g) Chemical handling
h) Backwash
i) User guidelines (day care groups, large events)
j) Signage
k) Emergency response/communication plans
l) System check program
m) Employee illness policy
n) Remote monitoring systems
o) Chain of command

6) Appendices: Include explanations of data, discussion of decision-making process, back up recommendations with references.

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